

Wetting properties of porous media

In this study the wetting properties of solutions of various concentrations of commercially available dishwasher detergent with distilled water are investigated using the KRUSS DSA100 standard drop-shape analyser operated using the ADVANCED program. For each concentration the contact angle and drop base diameter when solutions are applied to three types of sponge have been determined. The sponges used are the Tesco car sponge, Spondex washup sponge and an audio sponge. It was found that when pure distilled water droplets are deposited on the porous sponges partial wetting behaviour is observed. When any concentration of commercial surfactant solution is deposited, there is a change to a complete wetting scenario. It has been shown that having the same pore size does not correlate to the same dynamic wetting behaviour. For all of the sponges tested increasing surfactant concentration decreases the rate of surface spreading and increases total time period of the droplet.